Average cloudiness and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	4.7	− 0.4	Missouri Valley	3.8	− 0.4
Middle Atlantic	4.6	− 0 3	Northern slope	4.0	+ 0.3
South Atlantic	5 8	+ 0.6	Middle slope	4.0	− 0.1
Florida Peninsula	5.3	+ 0.3	Southern slope	3.0	− 1.5
East Gulf	6.3	+ 0.9	Southern Plateau	3.3	0 0
West Gulf	3 5	− 0.6	Middle Plateau	4.0	+ 0.9
Ohio Valley and Tennessee	5.7	+ 1.1	Northern Plateau	2.8	+ 0.1
Lower Lakes	4 0	− 0.5	North Pacific	4.1	− 0 5
Upper Lakes	4.3	− 0.3	Middle Pacific	4.8	+ 1.3
North Dakota	3.3	− 1.1	South Pacific	2.9	+ 0.1
Upper Mississippi Valley	4.4	+ 0.1			

Average relative humidity and departures from the normal.

Districts.	Average.	Departure from the normal.	Districts.	Average.	Departure from the normal.
New England	75	− 5	Missouri Valley	62	− 4
Middle Atlantic	72	− 2	Northern slope	50	− 2
South Atlantic	82	+ 2	Middle slope	54	− 6
Florida Peninsula	80	0	Southern slope	50	− 9
East Gulf	82	+ 4	Southern Plateau	43	+ 5
West Gulf	72	− 2	Middle Plateau	40	+ 8
Ohio Valley and Tennessee	76	+ 7	Northern Plateau	34	− 4
Lower Lakes	69	0	North Pacific	73	+ 8
Upper Lakes	67	− 5	Middle Pacific	60	− 6
North Dakota	58	− 8	South Pacific	64	0
Upper Mississippi Valley	66	− 2			

RIVERS AND FLOODS.

By Prof. H. C. FRANKENFIELD, in charge River and Flood Division.

It is to be expected that a season of marked deficiency in precipitation will be followed by low stages of water in the rivers affected, but in the upper Mississippi River, during the month of July, good stages can reasonably be assured from the ebb of the spring rise, supplemented by summer showers during the preceding month. During the present month, however, owing to deficient precipitation, the Mississippi River, above the mouth of the Missouri, together with some of the tributaries, was abnormally low, and at a number of places the stages were the lowest of record for the month. At Red Wing, Minn., on the Mississippi River, the stage of −0.6 foot from July 29 to 31, inclusive, was the lowest recorded stage for any month, and a low-water record of −0.8 foot was established also at Chippewa Falls, Wis., on the Wisconsin River, on July 24. Low water prevailed also at other places in the country, notably in the Snake River in Idaho and its tributaries, and in portions of the Arkansas River, between Wichita, Kans., and Tulsa, Okla. The low water in Idaho seriously interfered with placer mining and irrigation interests. That in the Arkansas River was not of consequence, except that as a matter of record it should be stated that the stages of −3.8 feet from July 26 to 31, inclusive, at Wichita, and of 1 foot from July 29 to 31, inclusive, at Tulsa, were the lowest of record.

The stages in the Missouri River, in the Mississippi below the mouth of the Missouri, and in the Ohio were seasonable.

The rivers, as a rule, were free from floods, but there were torrential rains in several localities that caused the smaller tributaries to overflow with great resulting damage, much greater, in fact, than frequently follows a severe flood in a large river, as they occurred at the height of the crop season. During the night of July 15 one of these cloudbursts occurred over northwestern Kentucky, southwestern Indiana, and southeastern Illinois, and it is reported that crops, consisting principally of tobacco in Kentucky, and property, to the combined value of at least $2,000,000 were destroyed. The White and lower Wabash rivers rose rapidly and flood stages were reached in the west fork of the White River from July 17 to 20, inclusive, but the major portion of the damage fell upon the State of Kentucky.

On July 22 a severe rainstorm visited the mining town of Bisbee in southeastern Arizona, and the torrents from the mountains resulted in the loss of several lives and caused damage to the amount of about $150,000. Another cloudburst on the morning of July 29 caused the waters of Bear Creek to overflow at Hannibal, Mo., with resulting damage of the usual character to the amount of about $75,000, and on the same day rains of a similar character in eastern Colorado did still more damage, mainly to railroads. Large sections of track were completely washed away over the territory bounded by Colorado Springs, Trinidad, Salida, and La Junta, and traffic was necessarily suspended for some time. The greater portion of the water came down the Fountain River to Pueblo.

The continuous rains of the first decade of the month over Georgia, Alabama, and Mississippi were followed by decided rises in the rivers, but not to flood stages, except in the upper Yazoo River. At Swanlake, Miss., this river was above the flood stage of 24 feet from July 19 to 31, inclusive, and crop damage to the amount of about $8,000 was reported. Warnings were issued for several of these rises, and along the Alabama River they were of great benefit as the farmers were enabled to remove their cattle from the lowland pastures to places of safety.

Hydrographs for typical points on several principal rivers are shown on Chart I. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport, on the Red.

SPECIAL PAPERS ON GENERAL METEOROLOGY.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Librarian.

The following have been selected from among the titles of books recently received, as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Anonymous publications are indicated by a ——.

Ångström, A. Knutsson.
Une simple méthode pour déterminer la radiation nocturne, proposée par K[nut] Ångström, publiée par A. Knutsson Ångström. Upsala. 6 p. f°. (Nova acta reg. soc. sci. Upsala. s. 4. v. 2. n:o 8.)

British balneological and climatological society.
Journal of balneology and climatology. v. 13, 1909–10, with indices to the 13 volumes London. 1909–10. xii, 238p. 8°.

Budig [Wilhelm Heinrich] Walter.
Die durch Niederschläge hervorgerufenen Störungen des Luftelektrischen Feldes in Potsdam. Auf Grund 4-jähriger Registrierungen mit besondere Berücksichtigung von Böen. [Berlin.] 33, xviiip. 8°. (Inaug.-Dis.-Berlin.)

Charcot, J[ean]-B[aptiste].
Rapports préliminaires sur les travaux exécutés dans l'antarctique par la mission commandée par J.-B. Charcot de 1908 à 1910. Paris. 1910. ix, 103 p. 4°. (Académie des sciences.)

Dove, Karl, & Frankenhäuser.
Deutsche Klimatik. Grundriss der Lehre von den Luftkuren... unter besonderer Berücksichtigung Deutschlands. Mit Tabellen und 4 Karten. Berlin. 1910. xii, 280p. 8°.

Ebert, H., & Kurz, K.
Registrierungen der luftelektrischen Zerstreuungen in unmittelbarer Nähe des Erdbodens. München. 1909. 68p. 4°. (Abhdlgn. k. bay. Akad. Wiss., math.-phys. Kl., 25. Bd. 2. Abhdl.)